

REMARKS

In this Response, the applicant amends claims 1 and 23 and adds new claims 31-35. An extra claim fee is paid for 3 additional dependent claims. Accordingly, claims 1, 3-20, 23-27, and 29-35 are pending in the application.

A. Response to Rejection under 35 U.S.C. §112

1. In paragraphs 1 and 2 of the Office Action, the Examiner rejects claim 30 under 35 U.S.C. §112, first paragraph. In response, the applicant submits that the specification as filed gives sufficient guidance for one skilled in the art to understand that the DuPont membrane was the sulfonated tetrafluorethylene membrane. The applicant gave specific thicknesses and electro/chemical properties sufficiently particular to identify sulfonated tetrafluorethylene as a preferred membrane construction.

B. Response to Rejections under 35 U.S.C. §102

1. In paragraphs 3 and 4 of the Office Action, the Examiner rejects claims 1 and 7-12 under 35 U.S.C. §102(b) as being anticipated by U.S. patent number 6,204,545 ("Nakata"). The applicant respectfully traverses this rejection. The applicant previously amended independent claim 1 to indicate that the membrane is "thin and flexible". Such a thin and flexible membrane is described, for example, in P[0042] of the application as published. Here, the membrane is described in an embodiment where the membrane is only 50-125 microns thick, and in one example, is the product Nafion ® from DuPont Chemical Co. In contrast, Nakata has a "plate" that is "mounted slideably in grooves", and is sufficiently ridged to have a hole (34a) formed in it to allow for flow of water. *See, Nakata, col. 8, lns. 52-58.* Further, a set of solar batteries (35) are "mounted piercingly on this partition member 34". *See, Nakata, col. 8, lns. 31-37.* Thus, the partition member 34 must be sufficiently ridged, and provide

sufficient stabilizing support, to securely hold and position a set of solar batteries. The examiner states that since the membrane does not provide structural support, it would be concluded that the membrane was thin and flexible. The applicant respectfully disagrees, and as described above, reads Nakata to teach the membranes is sufficiently rigid to have a water-passage hole, and to support a set of batteries.

However, to more quickly advance prosecution, the applicant has also provided amendments to claim 1 that more precisely defines the vessel's geometry, as well as defines the electrodes as elongated strips. The use of elongated electrode strips enables the electrodes to be made of relatively inexpensive materials, while still effecting good conversion efficiency. By using such an elongated geometry, the vessel and the electrodes are more cost effective to manufacture, allowing the claimed hydrogen-generating device to be more widely adopted and deployed.

Since Nakata fails to disclose a "thin and flexible" membrane, and does not have the elongated geometry as claimed, the applicant submits that Nakata does not anticipate claims 1 and 7-12.

C. Response to Rejections under 35 U.S.C. §103

1. In paragraphs 5 and 6 of the Office Action, the Examiner rejects claims 3 and 15-19 under 35 U.S.C. §103(a) as being unpatentable over U.S. patent number 6,198,037 ("Nakata") in view of U.S. patent number 5,512,787 ("Dederick"). Claims 3 and 15-19 each depend, directly or indirectly, from amended claim 1. In light of the amendments made to claim 1, discussed in Section B(1) above, the applicant respectfully submits that the Examiner will be unable to maintain a prima facie case as to obviousness for these claims, as not all the claimed limitations are found or suggested in the cited references. Accordingly, claims 3 and 15-19 can not be rendered obvious.

2. In paragraph 7 of the Office Action, the Examiner rejects claims 4-6 and 20 under 35 U.S.C. §103(a) as being unpatentable over U.S. patent number 6,198,037 (“Nakata”) in view of U.S. patent number 4,052,228 (“Russell”). Claims 4-6 and 20 each depend, directly or indirectly, from amended claim 1. In light of the amendments made to claim 1, discussed in Section B(1) above, the applicant respectfully submits that the Examiner will be unable to maintain a prima facie case as to obviousness for these claims, as not all the claimed limitations are found or suggested in the cited references. Accordingly, claims 4-6 and 20 can not be rendered obvious.

3. In paragraph 8 of the Office Action, the Examiner rejects claims 13, 14, 23, 26, 27, 29 and 30 under 35 U.S.C. §103(a) as being unpatentable over U.S. patent number 6,198,037 (“Nakata”) in view of U.S. patent number 3,870,616 (“Dempsey”). Claims 13, 14, 23, 26, 27, 29 and 30 each depend, directly or indirectly, from amended claim 1 or amended claim 23. In light of the amendments made to claims 1 and 23, discussed in Section B(1) above, the applicant respectfully submits that the Examiner will be unable to maintain a prima facie case as to obviousness for these claims, as not all the claimed limitations are found or suggested in the cited references. Accordingly, claims 13, 14, 23, 26, 27, 29 and 30 can not be rendered obvious.

4. In paragraph 9 of the Office Action, the Examiner rejects claims 24 and 25 under 35 U.S.C. §103(a) as being unpatentable over U.S. patent number 6,198,037 (“Nakata”) in view of U.S. patent number 3,870,616 (“Dempsey”), and further in view of U.S. patent number 5,512,787 (“Dederick”). Claims 24 and 25 each depend, directly or indirectly, from amended claim 23. In light of the amendments made to claim 23, discussed in Section B(1) above, the applicant respectfully submits that the Examiner will be unable to maintain a prima facie case as to obviousness for these claims, as not all the claimed limitations are

found or suggested in the cited references. Accordingly, claims 24 and 25 can not be rendered obvious.

D. New Claims

The applicant adds new claims 31-35, each of which depends from amended claim 1. Since amended claim 1 is believed to be in a condition for allowance, the applicant believes claims 31-35 are also allowable. No new matter was added. *See, for example, the application as published, Fig. 2A and P[0052].*

E. Conclusion

The applicant respectfully submits that pending claims 1, 3-20, 23-27, and 29-35 are in a condition for allowance. If the Examiner would find it useful, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'W. Kolegraff', with a stylized flourish extending from the end.

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